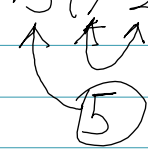


Math 0361

Practice Test 1

Simplify the expression:

1. $5[5+5(7-2)]$

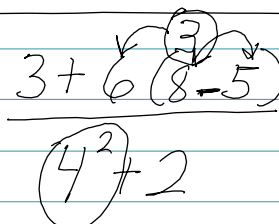


$$5[5+25]$$

$$5[30]$$

$$\boxed{150}$$

2. $3 + \frac{6(8-5)}{(4^2)+2} = \frac{3+18}{16+2} = \frac{21}{18}$



$$\frac{21 \div 3}{18 \div 3} = \boxed{\frac{7}{6}}$$

Evaluate the expression.

3. $x^2 - 5y + x$ when $x=20$ and $y=6$

$$20^2 - 5(6) + 20$$

$$400 - 30 + 20$$

$$370 + 20 = \boxed{390}$$

4. $\frac{x}{z} + 3y$ when $x=6$, $y=3$, and $z=2$

$$\frac{6}{2} + \underline{3(3)}$$

$$3 + 9 = \boxed{12}$$

Simplify

5. $(1m - 7m) - 3m + 5$

$(-6m - 3m) + 5$

$-9m + 5$

6. $(4x + 2) - (2x - 7)$

$(4x + 8) - (2x) + 7$

$2x + 15$

7. Subtract $9x + 10$ from $6x - 10$

Write 2nd equation 1st: $6x - 10$

change signs \rightarrow $-9x + 10$

$-3x - 20$

8. Write the following phrase as an algebraic expression and simplify. Let x represent the unknown number.

Triple a number, minus the sum of number and three
 parentheses

$3x - (x + 3)$

$3x - 1(x + 3)$

$3x - 1x - 3$

$2x - 3$ ✓

Solve the equation:

9.

$$x + 2 = 4 \quad \text{To get } x \text{ alone}$$

$$\begin{array}{r|l} -2 & -2 \\ \hline \end{array} \quad \text{do opposite}$$

$$x = 2$$

10.

$$-4(x + 2) + 5x = 12$$

$$-4x - 8 + 5x = 12$$

$$1x - 8 = 12$$

$$\begin{array}{r} +8 \quad +8 \\ \hline \end{array}$$

$$1x = 20$$

11.

$$\begin{array}{r} -9x = 81 \\ \hline -9 \quad -9 \end{array}$$

divide by -9

$$x = -9$$

12.

$$\frac{3}{7}x = -9 \quad \text{Get rid of fraction}$$

$$\frac{21}{7}x = -63 \quad \text{by multiply both sides by 7}$$

$$\frac{3x}{3} = \frac{-63}{3}$$

$$x = -21$$

$$13. \quad 8y + 3(y-6) = 4(y+1) - 2$$

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$

$$8y + 3y - 18 = 4y + 4 - 2$$

$$\begin{array}{r} 11y - 18 \\ - 4y \end{array} = \begin{array}{r} 4y + 4 \\ - 4y \end{array}$$

$$\begin{array}{r} 7y - 18 \\ + 18 \end{array} = \begin{array}{r} 2 \\ + 18 \end{array}$$

$$\frac{7y}{7} = \frac{20}{7}$$

$$\boxed{y = \frac{20}{7}}$$

Letters
Left

Numbers
Right

Divide

$$14. \quad \frac{5x}{5} + \frac{4}{5} = \frac{-4}{5} (5)$$

Multiply
5 on top

$$\frac{10x}{5} + \frac{20}{5} = \frac{-20}{5}$$

$$\begin{array}{r} 2x + 4 \\ - 4 \end{array} = \begin{array}{r} -4 \\ - 4 \end{array}$$

$$\frac{2x}{2} = \frac{-8}{2}$$

$$\boxed{x = -4}$$

$$15. \quad \begin{array}{r} 0.7x - 1.6 \\ + 1.6 \end{array} = \begin{array}{r} 0.5 \\ + 1.6 \end{array}$$

$$\begin{array}{r} 0.7x \\ 0.7 \end{array} = \begin{array}{r} 2.1 \\ 0.7 \end{array}$$

$$\boxed{x = 3}$$

$$16. \quad \frac{7x}{10} - \frac{1}{5} = 4 (10)$$

Multiply
Top by 10

$$\frac{70x}{10} - \frac{10}{5} = 40$$

$$\begin{array}{r} 7x - 2 \\ + 2 \end{array} = \begin{array}{r} 40 \\ + 2 \end{array}$$

$$\frac{7x}{7} = \frac{42}{7}$$

$$\boxed{x = 6}$$

Using x as the unknown number, write the statement as an equation and then solve for x .

17.

Three times a number, minus 6, is equal to.

two times a number, plus 7.

$$\begin{array}{r} 3x - 6 \\ - 2x \\ \hline \end{array} \quad \begin{array}{r} 2x + 7 \\ - 2x \\ \hline \end{array}$$

$$\begin{array}{r} x - 6 \\ + 6 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ + 6 \\ \hline \end{array}$$

$$x = 13$$

$$x = 13$$

18. A 42 inch board is to be cut into three pieces so the second piece is twice as long as first piece and the third piece is 4 times as long as first piece. If x represents the length of first piece, find the lengths of all three pieces.

$$\text{1st} + \text{2nd} + \text{3rd} = 42$$

$$1x + 2x + 4x = 42$$

$$\begin{array}{r} 7x = 42 \\ \hline 7 \end{array}$$

$$x = 6$$

$$\text{1st} = 6$$

$$\text{2nd} = 2(6) = 12$$

$$\text{3rd} = 4(6) = 24$$

19. A 17 foot piece of string is cut into two pieces so that the longer piece is 5 feet longer than the shorter piece. If the shorter piece is x feet long, find lengths of both pieces

$$1st + 2nd = 17$$

$$x + x + 5 = 17$$

$$\begin{array}{r} 2x + 5 = 17 \\ -5 \quad -5 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{12}{2}$$

$$(x = 6)$$

$$\begin{array}{l} 1st = 6 \quad \checkmark \\ 2nd = 6 + 5 = 11 \quad \checkmark \end{array}$$

20. The left and right page numbers of an open book are two consecutive integers whose sum is 455. Find these page numbers.

$$1st + 2nd = 455$$

$$x + x + 1 = 455$$

$$\begin{array}{r} 2x + 1 = 455 \\ -1 \quad -1 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{454}{2}$$

$$(x = 227)$$

consecutive means
add 1

$$\begin{array}{l} 1st = 227 \quad \checkmark \\ 2nd = 228 \quad \checkmark \end{array}$$